

CLAIMS

1. A plastics pipe which comprises an inner core and an outer removable skin layer bonded thereto, the outer removable skin layer comprising at least two layers of compatible polymeric materials, a first outer protective layer chosen for its physical and mechanical properties, and a second inner bonding layer which adheres to the inner core, the adhesion of the bonding layer to the inner core being sufficient to prevent substantial undesired relative movement between the skin layer and the core during installation, but insufficient to prevent the outer skin layer from being cleanly removed by peeling, at least at the ends of the pipe, and insufficient to cause a substantial reduction in the impact strength of the inner core.
2. A plastics pipe according to claim 1, wherein the adhesion of the first outer protective layer to the second inner bonding layer of the skin layer is at least five times the strength of the adhesion between the bonding layer and the inner core.
3. A plastics pipe according to claim 1 or 2, wherein the adhesion between the second inner bonding layer and the inner core is from 0.3 to 1.5 N/mm when measured by a rolling drum peel test as described in Appendix 1.
4. A plastics pipe according to any one of the preceding claims, in which the strength of the adhesive bond between the skin layer and the inner core is such that the impact strength of the composite pipe is at least 75% of the impact

strength of the inner core without the skin layer.

5. A plastics pipe according to any one of the preceding claims, in which the inner core comprises polyethylene.
6. A plastics pipe according to any one of the preceding claims, wherein the outer protective layer comprises a propylene homo-or co-polymer, or a propylene block co-polymer.
7. A plastics pipe according to claim 7, wherein the outer protective layer comprises a propylene block co-polymer.
8. A plastics pipe according to any one of the preceding claims, wherein the second inner bonding layer comprises a propylene homo - or co-polymer, or a propylene random co-polymer.
9. A plastics pipe according to claim 8, wherein the inner bonding layer comprises a propylene random co-polymer.
10. A plastics pipe according to any one of the preceding claims, which comprises an inner core of polyethylene and a skin comprising an outer layer of a propylene block co-polymer and an inner layer of a propylene random co-polymer.
11. A plastics pipe according to any one of the preceding claims, in which the inner core comprises polyethylene and the skin layer comprises a propylene co-polymer and wherein the impact strength of the pipe is greater than 300 joules,

when measured using the method of EN1411:1996 at a temperature of -10°C using a 90mm tup for impacting the pipe.

12. A plastics pipe according to any one of the preceding claims, wherein the skin layer has a thickness within the range of from 0.3 mm to 2.0 mm.
13. A plastics pipe according to any one of the preceding claims wherein the first outer protective layer has a thickness of from 0.3 mm to 1.8 mm.
14. A plastics pipe according to any one of the preceding claims, in which the second inner bonding layer has a thickness of from 0.025 mm to 0.2 mm.
15. A plastics pipe according to any one of the preceding claims, wherein the ratio of the external diameter of the pipe to the thickness of the skin layer is from 150 to 800.
16. A plastics pipe substantially as hereinbefore described.
17. A method for the production of a plastics pipe comprising an inner core and an outer removable skin layer bonded thereto, the outer removable skin layer comprising at least two layers of compatible polymeric materials, a first outer protective layer chosen for its physical and mechanical properties, and a second inner bonding layer which adheres to the inner core, which method comprises co-extruding molten polymeric materials forming the inner core

and the outer removable skin layer from one or more extruder dies, bringing the molten polymeric materials together and allowing them to cool, such that, on cooling, the adhesion of the bonding layer to the inner core is sufficient to prevent substantial undesired relative movement between the skin layer and the core during installation of the pipe, but insufficient to prevent the outer skin layer from being cleanly removed by peeling, at least at the ends of the pipe, and insufficient to cause a substantial reduction in the impact strength of the inner core.

18. A method according to claim 17, wherein the polymeric materials of the inner core and the outer removable skin layer are extruded simultaneously and brought together whilst still hot.
19. A method for the manufacture of a plastics pipe substantially as hereinbefore described.
20. A method of making a joint to a plastics pipe according to any one of claims 1 to 16, or of joining two such plastics pipes, which comprises peeling the skin layer from the region or regions of the pipe to be joined, to expose a clean surface suitable for electrofusion jointing, installing an electrofusion fitting over the clean surface or surfaces of the pipe or pipes and activating the electrofusion fitting to fuse the region or regions of the pipe or pipes thereto.